



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Confirmation Number: 8903

Daniel KEREK

Attorney Docket: P65288US1

Serial No. 10/769,764

Group Art Unit: 2617

Filed: February 3, 2004

Examiner: Khawar IQBAL

For: METHOD AND APPARATUS FOR STABILITY MARGIN  
DETERMINATION IN A REPEATER

**PRELIMINARY AMENDMENT**

Mail Stop RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In response to the Official Action mailed April 6, 2007, please amend the above-identified application as follows:

**Amendments to the Specification** begin on page 2 of this paper.

**Amendments to the Claims** are reflected in the listing of claims which begins on page 4 of this paper.

**Remarks** begin on page 6 of this paper.

**Amendments to the Specification:**

Please replace the paragraph beginning on page 1, line 14 with the following amended paragraph:

Primarily, the invention concerns repeaters for use in cellular telecommunication systems, including two antennas and two sets of amplifier chains for amplifying a signal from a base station (down-link) and a signal from a cellular mobile telephone (up-link), respectively. In such a system, the repeater receives ~~receives~~, amplifies and retransmits signals between the base station and the mobile telephone in both directions. However, the invention can be applied also to repeaters with only one signal path.

Please replace the paragraph beginning on page 2, line 21 with the following amended paragraph:

However, in both these known methods, ~~like in all other methods being used in repeaters today,~~ it is necessary to adjust the gain rather drastically in response to a detected rise of the signal level. Basically, this is because the criteria being used are met only when a state of instability is reached. Thus, in the known systems, it is not possible to determine ~~obtain a quantified value of~~ the stability margin as such. Therefore, it is difficult to provide a smooth control of the amplifier gain of the repeater.

Please replace the paragraph beginning on page 3, line 1 with the following amended paragraph:

Another object is to provide a method which would enable a smooth control of the repeater without drastic changes of the amplifier gain. Accordingly, it should be possible to establish ~~a quantified value of~~ whether the stability margin is increasing or decreasing as such.

Please replace the paragraph beginning on page 3, line 6 with the following amended paragraph:

These and other objects are achieved, according to the present invention, by taking two basic steps, viz.

- establishing the amplification of the repeater as a function of the frequency in a frequency band (which should be relatively wide), and
- ~~determining observing~~ the magnitude of harmonic ~~wave-like~~ variations in the established amplification as a function of the frequency, this magnitude constituting a measure of the stability margin ~~in such~~ that an increasing magnitude corresponds to a decreasing stability margin.

Please replace the paragraph beginning on page 3, line 29 with the following amended paragraph:

The method can be carried out by means of a measurement receiver connected to the ~~input and/or the output~~ and possibly also to the input of the repeater by means of a directional coupler, preferably via a switch alternating between the input and the output.

Please replace the paragraph beginning on page 7, line 12 with the following amended paragraph:

Of course, the ~~measured calculated~~ value of the magnitude of the harmonic variations ~~stability margin~~ can form the basis of a control signal controlling the gain of the repeater, so as to keep the stability margin substantially constant at a desired level. For this purpose, the measurement receiver 60 may be connected to a control unit 70 adapted to implement such a control. If desired, the measurement and control can be initiated remotely, e.g. from an operation and monitoring centre (not shown) via a telephone modem 80 or some other telecommunication link.